REMARKS/ARGUMENTS

This amendment is responsive to the Office Action mailed May 30, 2003 wherein the Examiner identified four species of claims in the present case; Species A (claims 2-8, 20-26, and 42-45); Species B (claims 9-18, 27-40); Species C (claims 46-78); and Species D (claims 79-103). Applicants provisionally elected Species A for prosecution at this time. In the Office Action, claims 1-4, 19-22, 41-43 were rejected under 35 USC 102(b) as anticipated by Wilting, U.S. Patent No. 5,757,877; claims 5-6, 23-24, and 44 were rejected under 35 USC 103 as unpatentable over Wilting; and claims 7-8, 25-26, and 45 are rejected under 35 USC 103 as unpatentable over Wilting and Trousset et al., U.S. Patent No. 5,218,534. In this amendment, a paragraph in the specification is amended to correct a typographical error, and claims 1, 19, and 41 have been amended to recite the invention with greater particularity. Claims 1-8, 19- r26, and 41-45 remain under prosecution.

Applicants elect for prosecution at this time Species A as defined by the Examiner. These claims are the claims listed above as under prosecution at this time.

Applicants respectfully traverse the rejection of pending claims under section 102 as anticipated by Wilting, and under section 103 as obvious in view of Wilting and Trousset. Wilting discloses a method of analyzing CT or MR data to estimate a variation in diameter of a vessel, such as a blood vessel. Wilting provides that data from one cross-sectional view of the vessel in one location be compared with data of a second cross sectional view of the vessel in a different location; the problem Wilting attempts to address relates to decreased resolution of the data as the object imaged decreases in size. Wilting suggests resolving determination of this one-dimension (e.g., the distance between vessel walls) with determining a point of the data intensity profile that is one-half the maximum intensity of the peak intensity. This estimate of the sidewall location for the two sections of the vessel imaged can then be used to determine the one dimensional difference in diameter. Wilting discloses use of standard curves – e.g., Gaussian or Lorentz profiles – to approximate the data distribution seen in the two images and to thus provide a vehicle for estimating the point of one-half the maximum data intensity in the respective images (see, e.g., column 6 line 23 to column7 line 63 and Figures 2 and 3). Trousset discloses

methods of reconstruction of images of three dimensional objects illuminated with a conical projection of x-rays from a stationary source.

By contrast, the present invention, as recited in amended claims 1, 19, and 41 recite the present invention as comprising a process in which tomographic data from an array of pixels is fitted to a selected profile such that a magnitude of an extensional feature is provided in three dimensions. The one dimensional analysis of Wilting is prone to errors not only from the vagaries of the assumptions and computations of the Wilting method but also because such an approach relies solely on estimates of diameters and does not account for common situations such as lack of roundness of a vessel. See, e.g., specification at page 5, lines 24-32, page 16, lines 1-30. The present invention provides for a multi-dimensional presentation of the object imaged – at least two-dimensional and also three-dimensional. See, e.g., Specification page 7 line 21 to page 9 line 3 and pages 17-19 and Figure 4. The present invention, as recited in the independent claims under examination, provides for analysis of a selected portion of interest of imaging data such that the spatial relationship between the pixels and the relative brightness of the pixels is used for computing magnitude of an extensional feature of the object in three dimensions. It is respectfully submitted that Wilting neither discloses nor suggests, and indeed teaches away from, the present invention, and that claims 1, 19, and 41 are patentably distinct from the cited art. Similarly, claims depending from these independent claims are similarly patentably distinct. Further, Trousset teaches reconstruction of image data from a conical projection of x-rays, and does not disclose, teach or suggest reconstruction of tomographic data.

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For the reasons set forth above Applicants respectfully submit that the pending claims in this application are patentably distinct from the cited art and are in condition for allowance.

Respectfully submitted,

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